

**Commonwealth of Kentucky  
Natural Resources and Environmental Protection Cabinet  
Department for Environmental Protection  
Division for Air Quality  
803 Schenkel Lane  
Frankfort, Kentucky 40601  
(502) 573-3382**

**STATE ORIGIN  
AIR QUALITY PERMIT**

**Permittee Name:** A-Carb LLC  
**Mailing Address:** 1 Carbon Way, Walton, Kentucky 41094

**Source Name:** A-Carb LLC  
**Mailing Address:** Same as above  
**Source Location:** Same as above  
**UTM:** 4311.1N, 707.1E

**KYEIS ID #:** 21-015-00125  
**SIC Code:** 3728

**Region:** Florence  
**County:** Boone

**Permit Number:** S-01-026 (Revision 1)  
**Log Number:** 54503  
**Permit Type:** Minor Construction/Operating

**Application**  
**Complete Date:** January 26, 2001  
**Issuance Date:** February 21, 2001  
**Revision Date:** April 22, 2002  
**Expiration Date:** February 21, 2011

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**John E. Hornback, Director  
Division for Air Quality**

## **SECTION A - PERMIT AUTHORIZATION**

Pursuant to a duly submitted application the Kentucky Division for Air Quality hereby authorizes the construction and operation of the equipment described herein in accordance with the terms and conditions of this permit. This permit has been issued under the provisions of Kentucky Revised Statutes Chapter 224 and regulations promulgated pursuant thereto.

The permittee shall not construct, reconstruct, or modify an affected facility without first having submitted a complete application and receiving a permit for the planned activity from the Division, except as provided in this permit or in 401 KAR 52:040, State-origin permits.

Issuance of this permit does not relieve the permittee from the responsibility of obtaining other permits, licenses, or approvals that may be required by the Cabinet or other federal, state, or local agencies.

**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS****GROUP REQUIREMENTS:****01 (01)      Needling and Cutting Machines****Description:**

This emission point produces brake pre-forms from carbon fibers. The maximum rate of solid fiber scraps produced is 109.5 TPY. A 99% efficient fabric filter controls the emissions. Construction commenced: September 10, 1998.

**05 (07)      Scratching Machines****Description:**

This emission point processes brake pre-forms which have undergone carbonization in the carbonizing and infiltrating furnaces. The machining rate of brake pre-forms is approximately 258 TPY. A 99% efficient baghouse controls the emissions. Construction commenced: September 10, 1998.

**06 (08)      Finishing Machines****Description:**

This emission point finishes brake pre-forms into final products. The maximum rate of finishing waste produced is 48 TPY. A 99% efficient baghouse controls the emissions. Construction commenced: September 10, 1998, and January 26, 2001.

**17 (17)      Refurbishing Machining Center****Description:**

This emission point will take used brake disks that are received from the field and remachine the wear surfaces to current specifications. A 99% efficient baghouse and a 95% efficient fabric filter will be used to control particulate emissions. Construction commenced: April 2002.

**APPLICABLE REGULATIONS:**

401 KAR 59:010. New process operations. Applicable to particulate and visible emissions each emission point.

**1.      Operating Limitations:**

None

**2.      Emission Limitations:**

Pursuant to Regulation 401 KAR 59:010:

- a. Visible emissions shall not equal or exceed 20 percent opacity, as determined with Reference Method 9, Appendix A 40 CFR 60.
- b. Hourly particulate emissions for each emission point as measured by Reference Method 5, Appendix A 40 CFR 60, shall not exceed the limit calculated by the following equation:

$$E = 3.59 P^{0.62}$$

Where E is the particulate emission in lbs/hour and P is the process weight (i.e. the maximum amount of solid scraps/wastes produced or maximum amount of output

**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**

product) in tons/hour. If the process weight is less than or equal to 0.5 ton/hour, the particulate matter emission limitation shall be 2.34 lbs/hour.

**COMPLIANCE DEMONSTRATION:**

The process weight shall be determined in average hourly tons by averaging the daily process weight rate over daily hours of operation. Particulate emissions shall be calculated by the following equation:

$$E = P \times EF$$

Where E is particulate emissions in lbs/hr, P is averaged process weight in tons/hr and EF is the KYEIS particulate emission factor in lbs/ton of process weight.

**3. Testing Requirements:**

None

**4. Monitoring Requirements:**

- a. To provide reasonable assurance that the visible emission limitations are being met pursuant to 401 KAR 59:010, the permittee shall:
  - i. Determine the opacity of emissions during operation from each stack or vent by Reference Method 9 quarterly, or more frequently if requested by the Division.
  - ii. Perform a qualitative visual observation of the opacity of emissions from each stack/vent on a weekly basis and maintain a log of the observation. See 5. Recordkeeping Requirements.
  - iii. Determine the opacity of emissions by Reference Method 9 if visible emissions from any stack/vent is perceived or believed to exceed the applicable standard.
- b. To provide reasonable assurance that the particulate matter emission limitations are being met pursuant to 401 KAR 59:010, the permittee shall monitor the relevant operating parameters, including but not limited to:
  - i. The monthly rate and type of process weight.
  - ii. The monthly total hours of operation.
  - iii. The number of control equipment malfunction and the duration of each occurrence.

**5. Recordkeeping Requirements:**

- a. The permittee shall keep records of the relevant operating parameters, including but not limited to:
  - i. The monthly rate and type of process weight.
  - ii. The monthly total hours of operation.
  - iii. The number of control equipment malfunction and the duration of each occurrence.
- b. In addition, the permittee shall maintain a log of qualitative visual observations performed. The log shall note:
  - i. Whether any air emissions (except for water vapor) were visible from the vent/stack.
  - ii. All emission points from which visible emissions occurred.
  - iii. Whether the visible emissions were normal for the process.

**6. Reporting Requirements: See General Conditions, C. Reporting Requirements.**

**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)****03 (04)          Boiler #1****03 (05)          Boiler #2****Description:**

Each boiler is a Cleaver Brooks Model CB-LE 1700, natural gas fired boiler, which has a rated capacity of 32.658 mmbtu/hour. Both boilers have low NO<sub>x</sub> burners that control NO<sub>x</sub> emissions with 42% efficiency. Boiler #2 is a standby boiler and is the newer of the 2 boilers. Construction commenced: September 10, 1998, and October 1, 2000.

**APPLICABLE REGULATIONS:**

401 KAR 59:015. New indirect heat exchangers. Applicable to particulate, sulfur dioxide, and visible emissions each boiler.

**1.      Operating Limitations:**

None

**2.      Emission Limitations:**

Pursuant to Regulation 401 KAR 59:015:

- a. Visible emissions shall not exceed 20 percent opacity, as determined with Reference Method 9, Appendix A 40 CFR 60.
- b. Hourly particulate emissions for each boiler as measured by Reference Method 5, Appendix A 40 CFR 60, shall not exceed 0.360 lb/mmbtu.
- c. Hourly sulfur dioxide emissions for each boiler as measured by Reference Method 5, Appendix A 40 CFR 60, shall not exceed 1.39 lbs/mmbtu.

**COMPLIANCE DEMONSTRATION:**

While burning natural gas, both boilers are considered to be in compliance with particulate matter, sulfur dioxide and opacity standards.

**3.      Testing Requirements:**

None

**4.      Monitoring Requirements:**

To provide reasonable assurance that the particulate, sulfur dioxide, and visible emission limitations are being met pursuant to 401 KAR 59:015, the permittee shall monitor the monthly amount and type of fuel burned in each boiler.

**5.      Recordkeeping Requirements:**

To provide reasonable assurance that the particulate, sulfur dioxide, and visible emission limitations are being met pursuant to 401 KAR 59:015, the permittee shall keep records of the monthly amount and type of fuel burned in each boiler.

**6.      Reporting Requirements:**

See General Conditions, C. Reporting Requirements.

**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)****02 (02, 03) Area #1 and Area #2 Carbonizing Furnaces****Description:**

This emission point consists of 4 electrically operated carbonizing furnaces: furnaces #441, #481, and #482 in Area #1 and furnace #490 in Area #2. Pre-forms from the needling and cutting machines are carbonized in these furnaces before undergoing a second stage carbonization process in the infiltrating furnaces. The output rate of carbonized brake pre-forms is approximately 115 TPY. Two thermal oxidizers control the emissions in these areas. Construction commenced: September 10, 1998, and January 26, 2001.

**APPLICABLE REGULATIONS:**

401 KAR 63:060. List of hazardous air pollutants, petitions process, lesser quantity designations, and source category list. Applicable to hydrogen cyanide emissions.

**1. Operating Limitations:**

None

**2. Emission Limitations:**

None

**3. Testing Requirements:**

None

**4. Monitoring Requirements:**

The permittee shall monitor hydrogen cyanide emissions by the following equation:

$$E = P \times EF$$

Where E is hydrogen cyanide emissions in lbs/hr, P is averaged process weight in tons/hr and EF is the KYEIS hydrogen cyanide emission factor in lbs/ton of process weight.

**5. Recordkeeping Requirements:**

The permittee shall keep records of hydrogen cyanide emissions.

**6. Reporting Requirements:**

See General Conditions, C. Reporting Requirements.

**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)****03 (04) 8 Infiltration Furnaces****Description:**

This emission point consists of 8 electrically operated infiltration furnaces: furnaces #501-504 in Area 1 and furnaces #505-508 (of which 2 are new furnaces) in Area 2. Carbon pre-forms carbonized in the initial stage (carbonizing furnaces) are processed in these CVI (carbon vapor infiltration) furnaces. The output rate of brake pre-forms is approximately 317 TPY. The effluent gas stream is directed to the boiler. Construction commenced: September 10, 1998, and January 26, 2001.

**APPLICABLE REGULATIONS:**

None

**1. Operating Limitations:**

None

**2. Emission Limitations:**

None

**3. Testing Requirements:**

None

**4. Monitoring Requirements:**

The permittee shall monitor the relevant operating parameters, including but not limited to:

- a. The monthly rate and type of process weight.
- b. The monthly total hours of operation.

**5. Recordkeeping Requirements:**

The permittee shall keep records of the relevant operating parameters, including but not limited to:

- a. The monthly rate and type of process weight.
- b. The monthly total hours of operation.

**6. Reporting Requirements:**

See General Conditions, C. Reporting Requirements.

**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**

**04 (06)          6 Cooling Towers**

**Description:**

This emission point consists of 6 cooling towers: 2 non-contact, 2 direct contact, and 2 new direct contact cooling towers. The amount of process water to each tower is about 118-132 thousand-gals/hour. The emissions from these towers are fugitive emissions. Construction commenced: September 10, 1998, and January 26, 2001.

**APPLICABLE REGULATIONS:**

None

**1.      Operating Limitations:**

None

**2.      Emission Limitations:**

None

**3.      Testing Requirements:**

None

**4.      Monitoring Requirements:**

None

**5.      Recordkeeping Requirements:**

None

**6.      Reporting Requirements:**

See General Conditions, C. Reporting Requirements.



**SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**

**07 (09)            Emergency Diesel Generator**

**Description:**

This emission point is a 700 kW, diesel-powered generator, which is used for the orderly shutdown of the furnace in case of power failure. The projected maximum hours of operation are 500 hours/year. Construction commenced: February 3, 2000.

**APPLICABLE REGULATIONS:**

None

**1.        Operating Limitations:**

None

**2.        Emission Limitations:**

None

**3.        Testing Requirements:**

None

**4.        Monitoring Requirements:**

The permittee shall monitor the following:

- a. The monthly amount and type of fuel used.
- b. The monthly total hours of operation.

**5.        Recordkeeping Requirements:**

The permittee shall keep records of the following:

- a. The monthly amount and type of fuel used.
- b. The monthly total hours of operation.

**6.        Reporting Requirements:**

See General Conditions, C. Reporting Requirements.

## **SECTION C - GENERAL CONDITIONS**

### **A. Administrative Requirements**

1. The permittee shall comply with all conditions of this permit. Noncompliance shall be a violation of 401 KAR 52:040, Section 3(1)(b) and is grounds for enforcement action including but not limited to the termination, revocation and reissuance, or revision of this permit.
2. This permit shall remain in effect for a fixed term of ten (10) years following the original date of issue. Permit expiration shall terminate the source's right to operate unless a timely and complete renewal application has been submitted to the Division at least six months prior to the expiration date of the permit. Upon a timely and complete submittal, the authorization to operate within the terms and conditions of this permit, including any permit shield, shall remain in effect beyond the expiration date, until the renewal permit is issued or denied by the Division. [401 KAR 52:040, Section 15]
3. Any condition or portion of this permit, which becomes suspended or is ruled invalid as a result of any legal or other action shall not invalidate any other portion or condition of this permit. [Material incorporated by reference by 401 KAR 52:040, Section 1a, 11]
4. Pursuant to materials incorporated by reference by 401 KAR 52:040, this permit may be revised, revoked, reopened, reissued, or terminated for cause. The filing of a request by the permittee for any permit revision, revocation, reissuance, or termination, or of a notification of a planned change or anticipated noncompliance shall not stay any permit condition. [Material incorporated by reference by 401 KAR 52:040, Section 1a, 4,5]
5. This permit does not convey property rights or exclusive privileges. [Material incorporated by reference by 401 KAR 52:040, Section 1a, 8].
6. Nothing in this permit shall alter or affect the liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance. [401 KAR 52:040 Section 11(3)]
7. This permit shall be subject to suspension at any time the permittee fails to pay all fees within 90 days after notification as specified in 401 KAR 50:038, Air emissions fee. The permittee shall submit an annual emissions certification pursuant to 401 KAR 52:040, Section 20. (Note include only if subject to federal NSPS or NESHAP standards or 25 TPY in an ozone non-attainment)

### **B. Recordkeeping Requirements**

1. Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained by the permittee for a period of at least five years and shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality. [401 KAR 52:040 Section 3(1)(f)]

## **SECTION C - GENERAL CONDITIONS (CONTINUED)**

2. The permittee shall perform compliance certification and recordkeeping sufficient to assure compliance with the terms and conditions of the permit. Documents, including reports, shall be certified by a responsible official pursuant to 401 KAR 52:040, Section 21.

### **C. Reporting Requirements**

1.
  - a. In accordance with the provisions of 401 KAR 50:055, Section 1 the owner or operator shall notify the Division for Air Quality's Florence Regional Office concerning startups, shutdowns, or malfunctions as follows:
    - i. When emissions during any planned shutdowns and ensuing startups will exceed the standards notification shall be made no later than three (3) days before the planned shutdown, or immediately following the decision to shut down, if the shutdown is due to events which could not have been foreseen three (3) days before the shutdown.
    - ii. When emissions due to malfunctions, unplanned shutdowns and ensuing startups are or may be in excess of the standards notification shall be made as promptly as possible by telephone (or other electronic media) and shall cause written notice upon request.
  - b. In accordance with the provisions of 401 KAR 52:040, Section 7(1)(e)2, the owner or operator shall promptly report deviations from permit requirements including those attributed to upset conditions (other than emission exceedances covered by Reporting Requirement condition 1 a) above) , the probable cause of the deviation, and corrective or preventive measures taken; to the Division for Air Quality's Florence Regional Office within 30 days. Other deviations from permit requirements shall be included in the semiannual report.
2. The permittee shall furnish information requested by the cabinet to determine if cause exists for modifying, revoking and reissuing, or terminating the permit; or compliance with the permit. [Material incorporated by reference by 401 KAR 52:040, Section 1a, 8].
3. Summary reports of monitoring required by this permit shall be submitted to the Division's Florence Regional Office at least every six (6) months during the life of this permit. For emission units that were still under construction or which had not commenced operation at the end of the 6-month period covered by the report and are subject to monitoring requirements in this permit, the report shall indicate that no monitoring was performed during the previous six months because the emission unit was not in operation.

The semi-annual reports are due January 30th and July 30th of each year unless other dates are approved and allowed by the Regional Office. All reports shall be certified by a responsible official pursuant to 401 KAR 52:040, Section 21. All deviations from permit requirements shall be clearly identified in the reports.

## **SECTION C - GENERAL CONDITIONS (CONTINUED)**

### **D. Inspections**

In accordance with the requirements of 401 KAR 52:040, Section 3(1)(f) the permittee shall allow authorized representatives of the Cabinet to perform the following during reasonable times:

- a. Enter upon the premises to inspect any facility, equipment (including air pollution control equipment), practice, or operation;
- b. To access and copy any records required by the permit;
- c. Inspect, at reasonable times, any facilities, equipment (including monitoring and pollution control equipment), practices, or operations required by the permit. Reasonable times are defined as during all hours of operation, during normal office hours; or during an emergency.
- d. Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements.

Reasonable times are defined as during all hours of operation, during normal office hours; or during an emergency.

### **E. Emergencies/Enforcement Provisions**

1. The permittee shall not use as defense in an enforcement action, the contention that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance [Material incorporated by reference by 401 KAR 52:040, Section 1a, 3].
2. An emergency shall constitute an affirmative defense to an action brought for the noncompliance with the technology-based emission limitations if the permittee demonstrates through properly signed contemporaneous operating logs or relevant evidence that:
  - a. An emergency occurred and the permittee can identify the cause of the emergency;
  - b. The permitted facility was at the time being properly operated;
  - c. During an emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
  - d. The permittee notified the Division as promptly as possible and submitted written notice of the emergency to the Division within two working days after the time when emission limitations were exceeded due to the emergency and included a description of the emergency, steps taken to mitigate emissions, and corrective actions taken.
3. Emergency provisions listed in General Condition E.2 are in addition to any emergency or upset provision contained in an applicable requirement.
4. In an enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof.

**SECTION C - GENERAL CONDITIONS (CONTINUED)****F. Compliance**

1. Periodic testing or instrumental or non-instrumental monitoring, which may consist of record keeping, shall be performed to the extent necessary to yield reliable data for purposes of demonstration of continuing compliance with the conditions of this permit. For the purpose of demonstration of continuing compliance, the following guidelines shall be followed:
  - a. Pursuant to 401 KAR 50:055, General compliance requirements, Section 2(5), all air pollution control equipment and all pollution control measures proposed by the application in response to which this permit is issued shall be in place, properly maintained, and in operation at any time an affected facility for which the equipment and measures are designed is operated, except as provided by 401 KAR 50:055, Section 1.
  - b. All the air pollution control systems shall be maintained regularly in accordance with good engineering practices and the recommendations of the respective manufacturers. A log shall be kept of all routine and non-routine maintenance performed on each control device.
  - c. A log of the monthly raw material consumption and monthly production rates shall be kept available at the facility. Compliance with the emission limits may be demonstrated by computer program (spread sheets), calculations or performance tests as may be specified by the Division.
2. Pursuant to 401 KAR 52:040, Section 19, the permittee shall certify compliance with the terms and conditions contained in this permit by January 30th of each year, by completing and returning a Compliance Certification Form (DEP 7007CC) (or an approved alternative) to the Division for Air Quality's Florence Regional Office and the U.S. EPA in accordance with the following requirements:
  - a. Identification of the term or condition;
  - b. Compliance status of each term or condition of the permit;
  - c. Whether compliance was continuous or intermittent;
  - d. The method used for determining the compliance status for the source, currently and over the reporting period, and
  - e. For an emissions unit that was still under construction or which has not commenced operation at the end of the 12-month period covered by the annual compliance certification, the permittee shall indicate that the unit is under construction and that compliance with any applicable requirements will be demonstrated within the timeframes specified in the permit.
  - f. The certification shall be postmarked by January 30th of each year. Annual compliance certifications should be mailed to the following addresses:

Division for Air Quality Florence Regional Office 8020 Veterans Memorial Drive Suite #110 Florence, KY 41042	Division for Air Quality Central Files 803 Schenkel Lane Frankfort, KY 40601
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3. Permit Shield - A permit shield shall not protect the owner or operator from enforcement actions for violating an applicable requirement prior to or at the time of permit issuance. Compliance with the conditions of this permit shall be considered compliance with all:
  - (a) Applicable requirements included and specifically identified in this permit; or

**SECTION C - GENERAL CONDITIONS (CONTINUED)**

(b) Non-applicable requirements expressly identified in this permit.

**G. Construction Requirements:**

For emission points 02 (03) – Carbonizing furnaces #482 and #490, 03 (04) – 2 CVI furnaces, 04 (06) – 2 direct contact cooling towers, and 06 (08) – finishing machines:

1. Pursuant to 401 KAR 52:040, Section 12(3), unless construction is commenced on or before 18 months after the date of issue of this permit, or if construction is commenced and then stopped for any consecutive period of 18 months or more, or is not completed within a reasonable timeframe then the construction and operating authority granted by this permit for those affected facilities for which construction was not completed shall immediately become invalid. Upon a written request, the cabinet may extend these time periods if the source shows good cause.
2. Pursuant to 401 KAR 52:040, Section 12(4)(a) and 401 KAR 59:005, General provisions, Section 3(1), within 30 days following construction commencement, within 15 days following start-up and attainment of maximum production rate, or within 15 days following the issuance date of this permit, whichever is later, the owner and/or operator of the affected facilities specified on this permit shall furnish to the Division's Florence Regional Office, with a copy to the Division's Frankfort Central Office, the following:
  - a. Date when construction commenced, (See General Condition G.1).
  - b. Start-up date of each of the affected facilities listed on this permit.
  - c. Date when maximum production rate was achieved, (See General Condition G.3.b).
3.
  - a. Pursuant to 401 KAR 59:005, General provisions, Section 2(1), this permit shall allow time for the initial start-up, operation and (performance testing and/or compliance demonstration) of the affected facilities listed herein. However, within 60 days after achieving the maximum production rate at which the affected facilities will be operated, but not later than 180 days after initial start-up of such facilities, the owner or operator shall demonstrate compliance to a duly authorized representative of the Division.
  - b. Pursuant to 401 KAR 59:005, General provisions, Section 3(1)(b), unless notification and justification to the contrary are received by this Division, the date of achieving the maximum production rate at which the affected facilities will be operated shall be deemed to be 30 days after initial start-up.
  - c. Pursuant to Section VII.3 of the policy manual of the Division for Air Quality as referenced by 401 KAR 50:016, Section 1(1), results of performance test(s) required by the permit shall be submitted to the Division by the source or its representative within forty-five days after the completion of the fieldwork.
4. Operation of the affected facilities authorized by this permit shall not commence until compliance with applicable standards specified herein has been demonstrated in accordance with the requirements of 401 KAR 52:040, Section 12(4)(b). Until compliance is demonstrated, the source may only operate for the purpose of demonstrating compliance.

**SECTION D - INSIGNIFICANT ACTIVITIES**

The following listed activities have been determined to be insignificant activities for this source pursuant to 401 KAR 52:040, Section 6. While these activities are designated as insignificant the permittee shall comply with the applicable regulation and any level of periodic monitoring specified below.

<u>Description</u>	<u>Generally Applicable Regulation</u>
1. 08 (10) Emergency Diesel Pump Engine	None
2. Ultrasonic Cleaning	None
3. Electric Drying Oven	None
4. Anti-Oxidant Coating	None
5. 2 Electric Vacuum Annealing Furnaces	None
6. Nitrogen Scrubber	None